

Impact of Urbanization on the Potential benefits of Wetlands

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Abstract—Wetlands are the most productive ecosystems and provide many important services to our society. They are ecologically sensitive and adaptive systems. Wetlands represent enormous diversity depending upon their geographical location, dominant species, water chemistry and sediment characteristics. Many freshwater wetlands ecosystems are threatened degraded and lost due to urbanization, population growth, and increased economic activities. Despite all the ecological services and benefits as fisheries, forestry, carbon sequestration, water supply, groundwater recharge, flood control, nutrient recycling and biodiversity maintenance, these beneficial water bodies are considered as “waste lands”. As many of them act as the “sink” for untreated effluents from urban centres and industries.

Urbanization exerts significant influences on the structure and function of wetlands, mainly through modifying the hydrological and sedimentation regimes, and the dynamics of nutrients and chemical pollutants. Water in most lakes, streams and wetlands has been heavily degraded, mainly due to agricultural runoff of pesticides and fertilizers, and industrial and municipal wastewater discharges, all of which cause widespread eutrophication. Water from lakes that experience algal blooms is more expensive to purify for drinking or other industrial uses. Water bodies, such as rivers and lakes, near to urban centres are becoming increasingly saprobic and eutrophicated due to the discharge of partly treated or untreated wastewater.

Wetlands act as a sink for contaminants in many agricultural and urban landscapes. From an economic perspective too, wetlands have been suggested as a low cost measure to reduce point and non-point pollution. Natural wetlands, such as riparian wetlands, reduce the nutrient load of through-flowing water by removing nitrate and phosphorus from surface and subsurface runoff. Thus, ecological benefits of wetlands need to be considered for sustainable development.

Keywords: Wetlands, effluents, urbanization, eutrophication.